

## **SUPPLEMENTARY APPENDIX**

### **Lung ultrasound as a prognostic tool in emergency patients clinically suspected for COVID-19**

*(Blinded appendix)*

This appendix forms part of the original submission.

## **E-APPENDIX 1: Lung Ultrasound definitions and diagnostic criteria**

The 14-zone scanning protocol has been described by Laursen et al. in a previous published study [1].

The anterior and lateral surfaces on each side of the chest were divided into upper and lower quadrants. The posterior surfaces on each side were divided into an upper, middle and lower quadrant; each quadrant represented a scanning zone. The transducer was placed approximately in the middle of each zone, making a cross-sectional image of an intercostal space and the underlying pleura blades.

A **normal LUS** was defined as sufficient LUS investigation without any of the findings below.

An **abnormal LUS** was defined as any of the findings below being present. Using point-of-care principles, the abnormal findings were defined by sonomorphologic appearance, and grading was done using simple “eyeballing” (marked with \*) rather than comprehensive measurements.

**Visceral pleural thickening:** Widened visceral pleural line\*

**Fragmented visceral pleura:** Irregular or fragmented pleural line\*

**Absence of lung sliding:** Absence of a shimmering appearance of the pleura seen like “tiny ants marching on a string” and the absence of laser-like vertical hyperechoic reverberation artifacts arising from the pleural line\*

**Focal b-lines:** Three or more B-lines in a longitudinal plane between two ribs

**Interstitial syndrome:** Three or more B-lines in a longitudinal plane between two ribs in at least two of the anterior or lateral scanning zones on each hemithorax

**Pleural effusion:** Based on the presence of one or more of the following findings:

- a) Echo-free zone separating the visceral and the parietal pleura
- b) Echo-free zone displaying a change of form during breathing (sinusoid sign)

**Complex pleural effusion:** A separated or loculated pleural effusion

**Lung consolidation:** Hypoechoic heterogeneous echotexture, isoechoic with the liver (also known as lung hepatization) with a blurred and irregular margin

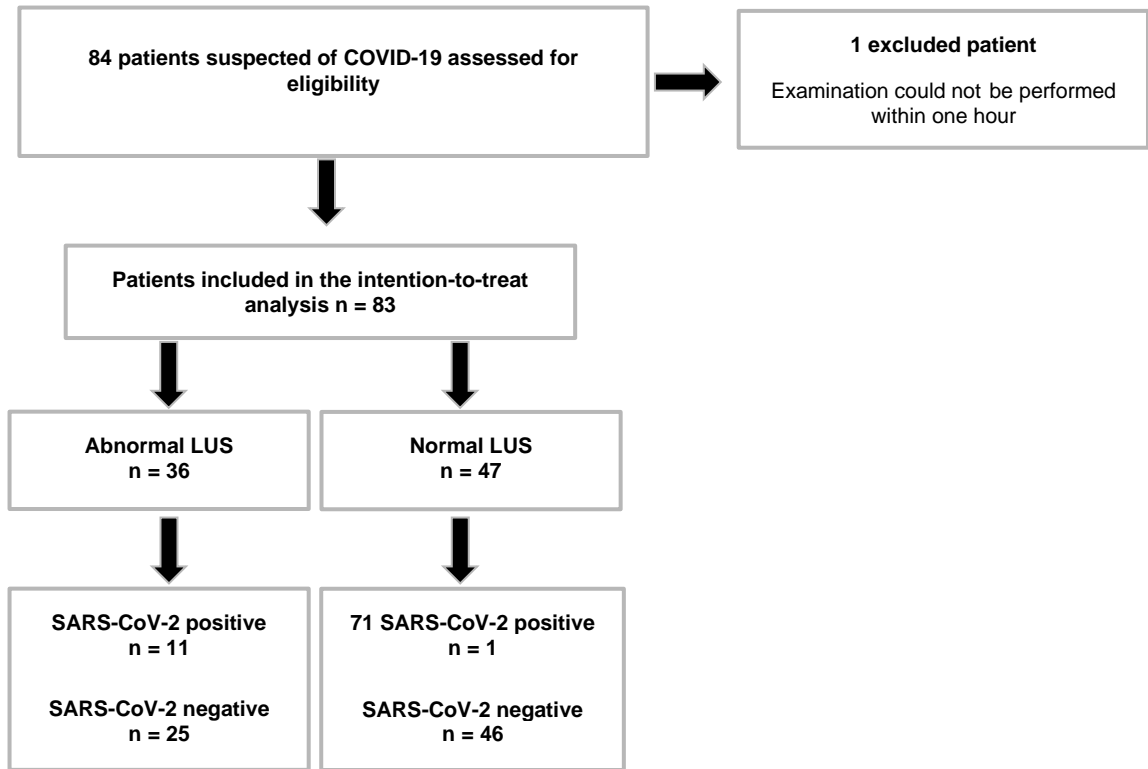
**Focal large consolidation:** Subpleural lung consolidation at least 3 cm\*

**Multifocal small consolidations:** Two or more small, hypoechoic, well-demarcated and rounded subpleural lung consolidations, approximately less than 3cm\*

**Suspected pneumothorax:** Absence of lung sliding, B-lines, lung pulse and lung point

The diagnostic criteria above were described by Volpicelli et al. in “International evidence-based recommendations for lung ultrasound with focus on emergency and critical care settings, 2012” [2].

## **E-APPENDIX 2: Flow chart of inclusion and exclusion**



## **E-APPENDIX 3: Handling of patients with missing outcome data**

It was decided to include patients with missing data. If any data was missing, it was reported in the tables in the original manuscript. In an ideal setting, all data would have been collected, but this study was done according to an intention-to-treat analysis without interfering with emergency physicians' normal procedures and decisions on whether to collect or report data in a specific way.

## Literature

- [1] Laursen CB, Sloth E, Lassen AT, et al. Point-of-care ultrasonography in patients admitted with respiratory symptoms: a single-blind, randomised controlled trial. *Lancet Respir Med* 2014;2:638–46. doi:10.1016/S2213-2600(14)70135-3
- [2] Volpicelli G, Elbarbary M, Blaivas M, et al. International evidence-based recommendations for point-of-care lung ultrasound. *Intensive Care Med* 2012;38:577–91. doi:10.1007/s00134-012-2513-4